ARMANDO POMBEIRO CURRICULUM VITAE (Abridged)

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ORCID: http://orcid.org/0000-0001-8323-888X . *Researcher ID*: I-5945-2012. *Scopus Author ID*: 7006067269. *Ciência ID*: 8311-38FA-CEFB
https://scholar.google.com/citations?user=c_GbPiEAAAAJ

Date and Place of Birth - June 9th, 1949, Porto. *Nationality* - Portuguese.
Education: Chemical Engineering (1972, IST); D. Phil. (1976, Univ. Sussex).
Present positions: Full Professor "Jubilado" (IST), *Honorary Professor* at St. Petersburg State Univ. (Institute of Chemistry), *Invited Chair Professor* at National Taiwan Univ. of S&T; President of the Chemistry Section of the Academy of Sciences of Lisbon and representative of this Section at the Scientific Council of this Academy; Vice-President of the Portuguese Electrochemical Society; Founder Coordinator of the "Coordination Chemistry and Catalysis" research group (CQE); founder Director of the multiuniversity "Catalysis and Sustainability" (CATSUS) PhD program; member of the Board *(Mesa)* of the General Assembly of the IST Association for Research & Development.

Honorary and official appointments, membership of professional bodies, commissions, etc.:
Full Member of the *Academy of Sciences of Lisbon* (since 1988), President of the Scientific Council of the Academy (2022-24), President of the Chemistry Section of the Academy (2022-), Vice-President of the Class of Sciences of the Academy (2006-12, and 1999-2000), Secretary-General of the Academy (2001-05) and Secretary of its Class of Sciences (2001-05), Vice-Secretary-General of the Academy and Secretary of its Class of Sciences (1998), Vice-Secretary of this Class (1993-98), Member of the Commission for Publications of this Academy; a Coordinator of the International Affairs of the Academy; a Representative of the Academy at the International Council for Science (ICSU) and at the European Science Foundation; Member of the European Academies' Science Advisory Council (EASAC);
Fellow of the *European Academy of Sciences* (EurASc) (2018); Member of the *Academia Europaea* (2022); Corresponding Member of the *Brazilian Academy of Sciences* (2025).
President of the *restructured CQE* (*ca.* 390 members) and Coordinator of its Thematic Line "Synthesis and Catalysis" (2015-19), member of the CQE directive body (2001-23) and founder of the research Group "Coordination Chemistry and Catalysis" and of its precedents;
Founding President of the *College of Chemistry of the University of Lisbon* (2017-19) and Coordinator of the Commissions for its creation and installation (2015-17);
Member of the Higher Council for Science, Technology and Innovation (2004) and of the Higher Council for Science and Technology (1995) (Portugal); Member of the External Evaluation Commission of the Physical Sciences of the Portuguese Universities (2002); Member of External Review Panels for assessment and accreditation of Chemistry Program (Baku State University**,** 2021) and of Eng. Chem. Processes Department (Padova University, 2005); Member of the Physical and Engineering Science and Technology Panel (1999) and of the Advisory Panel on the ASI Programme (1995-98), of the NATO Science Programme;
Distant Director (Head of Research Centre) at the RUDN University, Moscow (2021-23);
Honorary Professor at Saint Petersburg State University (since 2019) and *Invited Chair Professor* at the National Taiwan University of Science and Technology (since 2007);
Co-founder of the Portuguese Electrochemical Society, President (2009-14, 1994-95,1988-89), Vice-President (1990-91, 2018-) and Secretary (1983-87) of this Society; Co-founder of the Iberoamerican Society of Electrochemistry (SIBAE) and first National Representative (1992-96) at this Society; Member of the International Society of Electrochemistry; Affiliate Member of IUPAC; Honorary Member of the

Portuguese Chemical Society; former Fellow of the Royal Society of Chemistry and member of the American Chemical Society;
Chairman of the EurASc Symposium 2024 (Science for Sustainability), of the XXII Int. Symposium on Homogeneous Catalysis (2022), of the 1st Int. Conf. Non-covalent Interactions (2019), of the 7th EuCheMS Conference on Nitrogen-Ligands (2018), of the XXV Int. Conf. Organometallic Chemistry (XXV ICOMC, 2012); Director of a NATO ARW and Chairman of 3 international symposia on Electrochemistry; Member of the Organizing and/or Scientific Committees of *ca.* 80 international congresses on Electrochemistry (of the Iberoamerican Electrochemical Society, of the Journées d'Électrochimie, of the Portuguese Electrochemical Society, Chianti Meetings), on Coordination (ICCC), Organometallic (ICOMC) and Inorganic Chemistries, on Nitrogen Ligands, on Catalysis (*eg*, ISHC), on Solution Chemistry (IUPAC), on Science for Sustainability, etc.;
Member of the Organizing and/or Scientific Committees of international Schools on Coordination Chemistry (4) and on Organometallic Chemistry (ISOC) (14); Member of the Organizing Committees of various international or national symposia at the Academy of Sciences of Lisbon (on History and Development of Science, on interdisciplinary scientific and social themes);
Director of the FCT PhD Program on "Catalysis and Sustainability" (CATSUS, since its creation, 2014); Coordinator of the scientific area of "Synthesis, Molecular Structure and Chemical Analysis" (IST, 2009-14); Member of the Scientific Commissions of the PhD and Master courses (IST, 2009-19); Responsible professor for the Dual Master Program in Chemistry (IST-Univ. Camerino, since 2009).
Member of the Board *(Mesa)* of the General Assembly of the IST Association for Research & Development (IST-ID, since 2021), of the Scientific Council of IST (2017-19) and of the Council of the Coordinators of the Research Units (2015-19).
Coordinator of the Chemistry PhD Programme (IST, 2000-03); representative of the Inorganic Chemistry Department at the Coordination Commission of the School of Chemical Engineering (IST, 1981-84) and Coordinator of this Department (IST, 1983-84).

Prizes: SCF French-Portuguese Award (French Chemical Society, 2018, 1st time); Vanadis award (2018); Portuguese Electrochemical Society Award (2015); Madinabeitia-Lourenço (International Hispano-Portuguese) Prize (Royal Spanish Chem.Soc., 2013); Ferreira da Silva Prize (Port.Chem.Soc., 2012); Stimulus for Excellence (FCT, 2005); Scientific Prize Techn. Univ. Lisbon - Santander Totta (1st edition; the highest ranked researcher within chemical, biological and materials sciences, based on productivity and impact factor criteria), 2007; Scentific Prize Univ. Lisbon - Caixa Geral de Depósitos (2018).

***Journal Special Issues in his honor*:** "*Coordination Compounds and Catalysis"* (in *Coord. Chem. Rev.* 2020, *vol. 405*)*; "Synthesis and Applications of Organometallic Compounds"* (in *J. Organometal. Chem*, 2019).

Teaching: Courses on "Catalysis" [CATSUS, IST; DEA and MSc Multinational, *École Polytechnique*, Paris; MSc Chem./Chem. Eng., IST; Erasmus IP courses, *Univ. Camerino*, Italy; *Jyvaskyla Univ.* Summer School, Finland], "Organometallic Chemistry" (Chem. and MSc, IST), "Advanced Strategies of Synthesis" (PhD, IST), "Specialization Laboratories" (MSc, IST), "Inorganic Chemistry" (Chem., IST), "Electrochemical Methods in Synthesis" (MSc, IST), "Laboratory Techniques" (Chem., Chem. or Biolog. Eng., IST), "Analytical Chemistry" (Chem., IST), "Carbyne, Carbene and Isocyanide Complexes" (MSc, Univ. Sussex) and "Coordination Compounds in Pharmacology" (research course, IST).

Main research interests

- *Activation of small molecules* with biological, pharmacological, environmental or industrial interest or related ones, including *metal-mediated synthesis and catalysis* under mild/sustainable and unconventional conditions to the preparation of added-value compounds [*e.g.*, *alkanes (functionalization under mild conditions)* and derived oxidized and carboxylated products, water, alcohols, ketones, aldehydes, volatile organic compounds (VOCs), carbon dioxide, carbon monoxide, alkynes, phosphaalkynes, isocyanides,

dinitrogen, nitriles, cyanamides, nitric oxide, oximes, oxadiazolines, carboxamides, amidines, olefins, azides or cyanates], namely by searching for mimetic systems of biological processes (*e.g*. catalysed by peroxidases, particulate methane monooxygenase, nitrile hydratases and nitrogenases), alternatives for industrial processes and new types of molecular activation with significance in either fine chemistry (including compounds with bioactivity) or in bulk chemistry. Also comprehending: *non-covalent interactions* in synthesis; *crystal engineering of coordination compounds; self-assembly* of polynuclear and supramolecular structures, metal-organic frameworkds (MOFs) and coordination polymers, and their application as (pro-)catalysts; nano and functional materials and their use as catalysts; transition metal and organometallic chemistries and catalysis in *aqueous media*; *metal-ligand cooperation*; high *pressure gas reactions; catalysis in non-conventional media, such as supercritical fluids and ionic liquids*; *tandem catalysis*; *energy conversion reactions*; oxygen evolution, hydrogen evolution and oxygen reduction reactions; *bioactive complexes*; selective *chemosensors* of biological ions.

- *Molecular Electrochemistry* of coordinationand organic compounds: applications in electrosynthesis, electrocatalysis, mechanistic studies, establishment of potential-structure relationships and induction of chemical reactivity by electron-transfer.
- *Theoretical calculations* for interpretation of properties and reactivity at the molecular level, namely towards the establishment of reaction mechanisms.

Selected projects (under his responsibility): •"Catalytic Alkane Functionalization towards Sustainable Organic Synthesis" (PTDC program, FCT). •"Catalysis and Sustainability" (FCT PhD Program). • "Chemical Synthesis and Catalysis" (Nat. Program for Re-Equipping Science). •"Catalytic Carboxylation of Alkanes" (POCI program, FCT). •"Metal-based Synthons with Pharmacological Significance" (POCTI program, FCT). •"Coordination Chemistry and Molecular Electrochemistry, Synthesis and Catalysis" (FCT). •"Transition Metal Chemistry and Catalysis in Aqueous Media" (HRM EC Network) (Portug. team leader).
(*FCT – Foundation for S&T. HRM – Human Resources and Mobility Marie Curie Research Training. POCI – Science and Innovation Operat. Program. POCTI - Science, Technology and Innovation Operat. Program*)

Publications
1 book (author); 14 books (editor);
ca. 1,050 research publications (including *ca*. 190 chapters in books or reviews and *ca*. 860 other research publications in refereed international journals); *ca*. 40 patents;
ca. 20 didactic works; *ca*. 80 publications on various topics (S&T systems, Academy of Sciences of Lisbon, national electrochemical research, biographies, interviews, prefaces, editorials, etc.).

Other contributions
ca. 130 invited lectures (plenary, keynote and session lectures) at international conferences;
ca. 80 invited lectures at scientific institutions (usually foreign ones);
ca. 860 communications at conferences.

Research training supervision and mentoring
29 PhD and 19 MSc theses (degrees awarded), *ca*. 60 Doctorates (mostly foreign Post-doc. Fellows), *ca*. 75 Graduates or Undergraduates (mostly graduate foreign PhD, Marie Curie, Erasmus, FCT, etc. grant holders).

Citation Report (Web of Science, Febr. 6th, 2025)

Publications

923
Total

From 1900 to 2025

Citing Articles

14,872 Analyze
Total

14,039 Analyze
Without self-citations

Times Cited

32,903
Total

35.65
Average per item

23,522
Without self-citations

81
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Times Cited and Publications Over Time